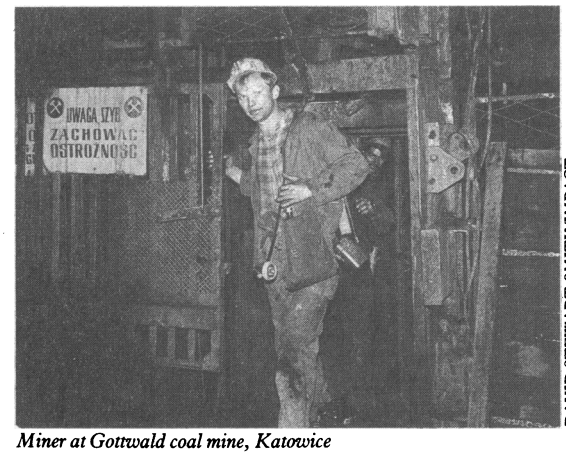
Pollution most foul

Karin Chopin

This is the second of three articles examining health issues in Poland

In 1848 Rudolf Virchow published his *Report on the Typhus Epidemic* in what today is Upper Silesia. His report detailed the oppression of the Polish speaking inhabitants by the Prussian landowners and bureaucracy, which he saw as the source of their poverty, starvation, and illness. Subsequently, in 1879, he noted that matters in Upper Silesia had hardly improved since his previous report. In June 1990 Professor Irena Norska-Borowka, head of the neonatal pathology clinic at the Silesian Medical Academy, Zabrze, published an account of health in Upper Silesia.[1] She wrote of "increasingly high rates of infant mortality and child morbidity in the Upper Silesian Mining Basin, a high percentage of mentally and physically handicapped children... socioeconomic factors such as poverty, smoking, alcohol and drug abuse, and previous abortions... hard physical work and stressful urban conditions." It comes as a shock to find things so little changed since Virchow's time.

As facts come to light after 45 years of communist obfuscation, Silesia is emerging as the most ecologically disturbed part of Europe with the poorest health record of any industrialised community in the developed world. It would seem that a century and a half of industrial so called "development" has apparently had little impact on the wretched life of that province—if anything, it has created a new source of ills. Last November I travelled to Upper Silesia to see for myself. It was not a part of the country my host, the itinerant Polish deputy minister of health, Dr Zbigniew Halat, visited too often if he could help it. "When Poland faces a tricky international football fixture," he had said to me when I told him I was going there for three weeks, "the odds are that it will be played in Katowice: if the surroundings do not incapacitate the opposition with depression, the oxygen free atmosphere usually takes a few yards off their pace."



DAVID STEWART-SMITH/IMPACT

Miner at Gottwald coal mine, Katowice

22 Montague Hill, Kingsdown, Bristol BS2 8ND
Karin Chopin, *medical student, Bristol University*

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The Polish side of the "black triangle"

Upper Silesia is the industrial base of an otherwise agricultural country. It consists of an almost continuously built up conurbation of about a dozen towns. Two million inhabitants make this the most densely populated part of Poland (population 38 million). It lies along one side of the infamous "black triangle," where Polish, Czech, and eastern German heavy industry creates desolation that does not respect borders. The air is sulphurous here. The snow is acid snow. The lakes and rivers still look alive. Not so the forests: whole tracts of once glorious birch and pine stand naked, stripped of their foliage, or stunted, resembling the skeletal survivors of a nuclear storm. The region has attracted worldwide attention since the beginning of the glasnost era because of the horrendous pollution from its outdated factories. It has been officially classified as an environmental disaster area by the Polish Academy of Sciences and represents an impressive example of the environment's influence on health and the results of unregulated industrial development and official neglect.

GERAINT LEWIS/IMPACT

Workers on their way to the salt mines

For 40 years the acceptable level of pollution was that amount the foundries, steel mills, chemical plants, and coal mines, etc, needed to emit to meet production quotas. The principal source of this pollution is Poland's dirty brown coal, which yields benzo(α)pyrene, one of the deadliest of carcinogens. The district is dominated by mining: Upper Silesia boasts 98% of Poland's coal production; 23% of the country's electrical energy is produced here, 52% of its raw steel, and 100% of its zinc, lead, and silver. Levels of heavy metals in soil and river sludge are alarmingly high around metallurgical plants. Sulphur dioxide outputs per head from this part of Poland (along with neighbouring parts of eastern Germany and Czechoslovakia) are the world's highest (table). Because untreated industrial and communal sewage are released in surface waters there is no water of first class purity—that is, no drinking water. One fifth of the food commercially grown here is polluted to the point of being unfit to eat. Rates of sick leave and industrial diseases are much higher than the national average. Accommodation is often situated alarmingly close to plants. There is a significant and rapidly worsening unemployment problem due, firstly, to the collapse of the Russian market and, secondly, to the forced closure of some of the least economically viable plants

Deposition of sulphur dioxide in various European countries and Polish regions[2]

Country or region	Deposition (tons/km²/year)
Czechoslovakia	22·6
Western Germany	14·5
Eastern Germany	35·0
Poland	12·0
Yugoslavia	5·7
Southern Poland (average)	13·8
Warsaw	20·0
Upper Silesian industrial region	50·0
Krakow	1687·0
Plock	1833·0
Chorzow, Upper Silesia	4075·0

or worst offenders in the pollution stakes. Cigarette smoking undoubtedly increases the health damage done by air pollution. In Poland in 1988, 72% of men and 57% of women in their early 30s smoked, compared with 33% of men and 30% of women in that age group in Britain (source: Katowice Sanitary Epidemiological Station, Upper Silesia).

A serious problem

The capital of Poland's black country is Katowice, and presiding over the sanitary epidemiological station there is the formidable Teodora Karczmarowa, who, once reassured that I had not come in pursuit of sensation, was most forthcoming, and, indeed, saw the *BMJ*'s interest in the situation in Upper Silesia as evidence that other people are taking the yellow flags as seriously as she does. "Any research into, or exposure of, links between Soviet industrial tyranny and disease was deemed seditious under the communist regime and therefore banned," she explained. "Although studies so far show only correlations and do not establish causation, they do indicate a marked effect of environmental degradation on the health of the population. We can't wait for irrefutable proof that people are falling sick and dying as a result of the devastation of the environment. There is no time to wait until the economic battles in this country have been won."

Two years ago the old regime would not even admit that there was a serious problem, and now there are laws controlling the disposal of waste and air pollution, while further emission levels are being drawn up and with them criteria for the environmental assessment of new projects.

Katowice—grim quarters in an ecological hazard area

Tired and angry

Democracy in eastern Europe has a hundred faces; this one was sad and silent. And somewhat sceptical about visiting foreigners, too. I had waited a long time to meet Professor Mieczyslaw Chorazy, head of the department of tumour biology at the Institute of Oncology in Gliwice, Upper Silesia. "Dr Livingstone, I presume?" he greeted me with a sardonic smile. "Another foreigner come to civilise the natives." I assured him I had come to do no such thing.

The prophetic vision of a kingdom of justice on earth, which was called Marxism, brought not only intolerable bestiality, suffering, and practical failure to hundreds of millions of men and women, but, according to Professor Chorazy and his associates, also seems to have left its mark on the genetic code of the population of Upper Silesia. "I have had the greatest difficulty in getting any of my material published until recently," he told me, and went on to elaborate the details of his research. Since 1984 he and his team have been analysing organic material from airborne pollutants collected on fibreglass filters in 27 locations throughout Upper Silesia. "Our evidence leads us to believe that people living in the area have very distinct signs of damaged genetic material. The epidemiology of the situation has not yet been published but significant correlations between clusters exist. We have unique human genetic material in our hands here, and we want to get other people interested—for example, in DNA repair, individual susceptibility, how particular genes are affected, etc. We would like to organise a tissue bank from this material so that others can have access to our unique material in Silesia."

Professor Chorazy is a tired and angry man. In common with many of the other health professionals I met in Poland, he too complained that well meaning international organisations came over with good intentions but on different wavelengths from the Poles. "All they bring in their baggage is ideology. Just look out of the window and see for yourself where ideology has got us these past 45 years.... What is the point in sending us 17 highly sophisticated pH meters [as his department had recently received] when (*a*) there are not enough people here trained in using them and (*b*) we don't need your sophisticated pH meters to tell us how filthy our rivers are anyway. OK, our methods of measurement may not be quite as exact as yours, but our rivers are pure poison anyway—if we're a couple of units out this way or that, what difference will it make in the long run? I fully appreciate the importance of accurate baseline measurements, but we simply cannot, in our circumstances, afford the luxury of establishing exactly how lethal our waters are. If the World Health Organisation or World Bank is going to spend money on us, let that money be spent doing something about our problems, not forever measuring them, for God's sake!"

"And where does it get us when they tell us that Poland comes second only to Russia on just about every European table of dangerous emissions? Should we close down all our factories and live unemployed, in the dark? Or redirect traffic out of our towns? What on to? The existing road network in these towns does not even come close to supporting the weight of local and transit traffic. Better spend that foreign aid on building a bypass for Gliwice, instead of pH meters for my laboratories.... And the number of visits I've had from Western ecological organisations! I keep on telling them that you cannot apply First World ecological philosophy to a Third World country such as Poland!" he expostulated.

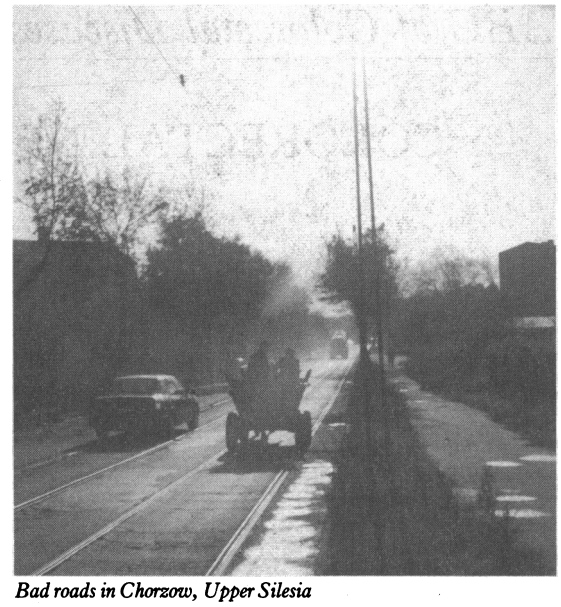
Sepia coloured cities

Mr Tadeusz Frackiewicz, a retired mining engineer, and his wife, Lucyna, professor of sociology at the Silesian Academy of Economic Sciences, had kindly offered to spend a day showing he me how people live in Upper Silesia.

Walking the streets of Silesian cities, one cannot help but notice that many of the people appear tired and prematurely aged, their health destroyed by the foul air they must breathe and a diet of greasy sausage and cigarettes. The women invariably look older than they really are. They are often poorly dressed and overweight. For me, they are the most beautiful in the world because I know what is behind the serious worried faces; behind a pale pink lipstick that doesn't exactly go with the colour of their eyes, or hair, or dress; behind the bad teeth, the smell of their sweat in a tram. Their beauty should not be compared with beauty that comes from the West. Their image, fashion, and make up should be judged by different criteria, with knowledge of the context, and, therefore, with appreciation. They deserve more respect than they get, simply because just being a woman—not to mention a beauty—is a constant battle against the way the whole system works.

We called in to see a family living in an apartment out of whose windows I stared across a busy dual carriageway straight into the open furnaces of Huta Kosciuszko ferro-alloy works. There was a satellite dish perched on their balcony. Indeed, a striking feature of the landscape in Upper Silesia is the number of satellite dishes around: "Junk food for the mind," Professor Frackiewicz said contemptuously. Driving around, here and there short stretches of road would drop a few feet, half a tenement block stood derelict due to subsidence, while people still lived in the half that had been spared. Like the English, the Poles love their gardens, and everywhere we saw allotments and backyards exploited to the maximum, with all manner of fowl pecking optimistically at any remaining patch of bare earth. But the vegetables apparently come up runty, the flowers looked sorry for themselves, and the rows of lettuces are reported to absorb as much as 200 mg of lead/kg (source: Katowice Sanitary Epidemiological Station, Upper Silesia).

In the town of Chorzow, I stopped to take a photograph and an old woman leaned out of a window and eyed me suspiciously, but I managed eventually to coax a smile out of her, and she invited us into her two room house. Onions to be put by for the winter covered her kitchen floor. There was a large cow lying on the bare earth in the room next door. She remarked on the absence of a wedding ring on my hand and we talked about the excess of batchelors in her small town, about the men drinking too much. She proffered a meal of boiled potatoes, pickles, and a most unappetising looking sliver of pork fat. Now and again her house shivered as a heavy truck passed on the road outside—probably yet another piece of Soviet military machinery going back home eastwards, further wrecking the terrible Polish roads. "Good riddance!" (a polite translation) she shouted out of the window each time one passed.



Bad roads in Chorzow, Upper Silesia

The pathos inspired by this highly industrialised region is also in part due to the ubiquitous erosion of its cities. Shabbiness and the colour of sepia are their common denominator. About 70 km to the east of Katowice lies the beautiful renaissance city of Krakow, Poland's ancient capital. We spent the afternoon there. The very city itself appears as if covered with a sepia coloured film—as if it were fading away, crumbling at the edges, disappearing. I saw angels without wings, caryatids without breasts, horses with broken legs, and gargoyles without noses, their hideous features eaten away by the acid rain—a city slowly decaying. Professor Frackiewicz explained: "To say it's the poor quality of paint under socialism is correct, but it is not enough. To say it's soft coal exploitation and air pollution, bad gasoline and bad cars, or lack of money—that again would be correct. But it is not the whole story. All these reasons (and probably many more) are not enough to explain the decrepitude. Our cities have been killed by decades of indifference, by the conviction that somebody else—the government, the party, those "above"—is in charge of them. Not the people. How could it have been the people if they were not in charge of their own lives? Maybe now, after the political changes in eastern Europe, the people will have a chance to repossess their cities, reprivatise them, treat them as if they are not merely places they are sentenced to be in or which they only pass through."

A monolith does not come undone overnight, and I had not come to Silesia expecting happiness and light, but as I neared the end of my stay I wondered how long it would take for that part of the world to shake off its melancholia. On the road back to Warsaw I even wondered how long it would take me to shake off mine.

The Cloth Hall in Krakow, Poland's ancient capital

1 Norska-Borowka I. Poland: environmental pollution and health in Katowice. *Lancet* 1990;335:1392-3.

2 Kabala SJ. *The environmental crisis in central Europe, a developmental perspective*. Pittsburgh: Center for Hazardous Materials Research, University of Pittsburgh, 1990.